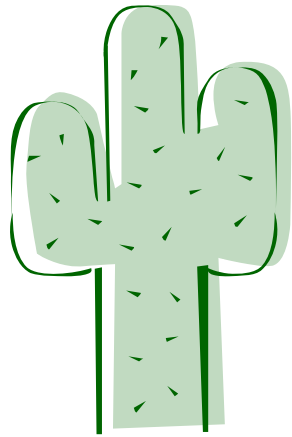


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BOTANICAL GARDENS

Cactus & Succulent Collection Brochure



Did you know?...
All Cactus are
succulents but not all
succulents are cactus!

The mission of the USF Botanical Gardens is to foster appreciation, understanding and stewardship of our natural and cultural botanical heritage through living collection, displays, education and research.

The Basic Information

Succulents

Succulents are plants that store water either in their roots, trunks, stems or leaves which allows them to grow and survive in very arid climates.

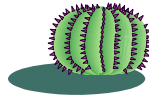
For instance, many varieties of Euphorbia, Kalanchoe, Pachypodium and Aloe are native to Madagascar's Thorny Desert. There droughts may last 10 to 24 months and average rainfall is less than 9 inches a season.



Cactus

Cactus such as saguaro found in the Sonoran Desert are exposed to temperatures from 20 to 120 degrees F and droughts lasting 2 years or more.

Cactus are not only found in arid deserts but also lush rain forest. Cacti are native to the new world, "The Americas." Cacti range from the northern tip of Canada to the southern tip of South America. **All Cactus are succulents but not all succulents are cactus!**



Flowers on cactus are large, colorful and singular versus growing in a cluster, typical of Euphorbia, another type of succulent. Each cacti flower is bisexual having both a pistil and stamen. Flowers are a primary way to identify specific cacti types.

Cactus are the only plants to possess a distinct *areola*, white tufts where spines emerge. Spine patterns and shapes are another primary way to identify various types of plants. Spines on succulents are modified leaves and have considerable value. Spines are a very strong deterrent when grazing animals approach. In many areas the tip of the spines provide a condensation point.

Water droplets formed may fall to the ground or towards the stem and provide moisture for the plant. Spines also provide shade to the plant reducing temperatures and moisture loss. They also provide sections a method to travel by hooking onto skin or fur and then being carried elsewhere.

Cacti are usually herbaceous as opposed to other spiny plants which are usually woody. Most other types of succulents are native to the old world, primarily Africa. While you see many succulents in Florida, other than cacti, they have been relocated by man. There are many types of succulents and all have a variety of differences from cacti, most often it is the flower or thorn structure.

Not all non cacti succulents have spines. However, when present they are not developed from a areola (currently a debated subject).

Euphorbia

There are over 2,000 species of the succulent, Euphorbia, in the world ranging from weeds to trees. Some help us celebrate the winter holiday season; i.e. the Poinsettia. Some may be spiny such as the Crown of Thorns; some may have no spines and small leaves, Pencil Tree. Leaves, if present, usually are swirls at the tips of branches. Clearly, a very diverse family. Euphorbia flowers are often small and in clusters, not always visible, as we often see the colored bracts. The bracts are basically colored leaves that surround the flowers. Many Euphorbias look like cacti but are not. Many have woody trunks but are succulents. Photosynthesis most often occurs in the stems and leaves during the rainy season. When the drought occurs, leaves are shed to reduce water loss and as the growing season is over photosynthesis becomes less important. Most Euphorbias have a sap latex that is thick, white and, in some cases, hazardous. It may cause skin blisters or temporary blindness. In some cultures, Euphorbia latex is used to poison arrows or to stun fish for netting.

Kalanchoe

Kalanchoes are another common succulent. Many are now considered native Florida plants. Many Kalanchoes have very attractive leaves. Some are covered with hair which keeps the leaf cooler by reducing the rate of evaporation from the leaf and reflecting light. Water storage is in the leaves of most kalanchoes. Several have spoon shaped leaves, "Kalanchoes Orygalis" which helps collect water and funnel it towards the stem.

Aloe

Aloes are part of the Aloaceae Family and very common succulents. There are old world aloes and many varieties common to the new world with a few considered native Florida plants.. The leaves, where water is stored, typically grow in a star pattern. Some grow close to the ground, and some on stalks. Flowers bloom from stalks that sprout from the center of a leaf pattern. Most aloes present a very attractive orange/pink bloom. Many aloes offer medicinal value in treatment of minor skin irritations, and aloe extract is often added to ointments.



Didiereaceae

A family closely related to the Cactaceae family with xerophytic spiny shrubs and small trees, This family is endemic to Madagascar and contains 3 genus: Alluaudia, Decarya, and Didierea.

Pachypodium

Pachypodium are often referred to as the Madagascar Palm. There is a large variation of form in the group. Thickened trunks store water. Some have spines, some do not. Leaves are located near the ends of plants on growing tips.

**We hope that you enjoy your tour
of this display area.**

University of South Florida Botanical Gardens

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The Central Florida Cactus & Succulent Society

holds their annual Show and Sale here at the Botanical Gardens
every Labor Day week end.
Admission is free.

The USF Botanical Gardens wishes to thank all our wonderful and dedicated
volunteers who have established and maintained the Cactus & Succulent collection
and Display Area.

Cactus & Succulent Curator: **Jagoda Edelman**
Collections advisor: Bob Gallion